



U.S. Coast Guard Marine Safety Center News

RECENT NEWS

MSC Featured in Proceedings Magazine

The Marine Safety Center (MSC) was featured in the Summer 2004 issue of the "Proceedings of the Marine Safety & Security Council" magazine (Volume 61, Number 2). Articles highlighted the history and organization of the MSC as well as current work topics. Included in this issue is a comprehensive summary of the MSC's role in the Control Verification Program. An online version of the journal is available at <http://www.uscg.mil/hq/g-m/nmc/pubs/proceed/>. A free subscription to this publication may be requested at <http://www.uscg.mil/proceedings>.

New CVE Legislation

In August 2004, Congress passed H.R. 2443, the Coast Guard Authorization Act. Section 411 of that act amends 46 U.S. Code Section 3505 and, thereby, essentially extends the Control Verification Examination (CVE) Program to foreign cruise ships that visit a U.S. port with U.S. citizens onboard as passengers. Under this amendment, a CVE is required regardless of where passengers originally embarked the vessel. To complete the CVE process, approved flag state plans must be reviewed by MSC. These plans are required six months in advance of anticipated completion of the process. The Coast Guard is currently developing an implementation strategy for this revised law.

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NVIC 1-93 Revision

Navigation and Vessel Inspections Circular (NVIC) 1-93, "*Control Verification Examinations (CVE's) of Foreign Passenger Vessels*," has served as the guideline for the foreign passenger ship inspection program for eleven years. The Commandant's Office of Compliance (G-MOC) is currently revising NVIC 1-93, with significant input from MSC staff and Coast Guard field offices. Because the CVE process has evolved considerably in the last eleven years, this revision is focused on capturing the current processes. An additional goal is to make the process more robust to facilitate incorporation of evolving industry standards and design features. When published, copies of this

NVIC will be available online at <http://www.uscg.mil/hq/g-m/nvic/>.

MSC ROLE IN CONTROL VERIFICATION EXAMS

The MSC supports the Coast Guard's marine safety and environmental protection mission by ensuring that commercial vessel designs conform to applicable domestic and international safety standards. This is accomplished through compliance reviews of vessel designs and oversight of third parties, such as maritime classification societies, who perform compliance reviews on behalf of the Coast Guard. The MSC reviews approximately 12,000 marine designs annually to ensure they comply with the U.S. Code of Federal Regulations, the Safety of Life at Sea (SOLAS) treaty and other national and international laws, regulations and treaties.

An active Port State Control Program is an integral facet of the SOLAS Convention, and passenger vessel safety is a specific area of emphasis for the Coast Guard. Those members of the cruise ship industry that serve the American marketplace are familiar with the Coast Guard CVE Program and our reviews of cruise ship designs for compliance with the fire safety and lifesaving standards in SOLAS. The MSC conducts the fire and life safety plan review aspect of this program, administers a structural fire protection (SFP) examination, and augments the examination team conducting the initial CVE for both new ships as well as existing ships that will be embarking passengers in U.S. ports for the first time.

The initial CVE process normally begins with a concept review meeting to discuss novel or interpretative issues before the vessel has reached the final design stage. Current practice for most designers is to submit conceptual plans for review and comment to MSC early in the design process. Flag-state-approved vessel plans are required to be submitted to the MSC at least six months in advance of the vessel's first U.S. port call. This is typically the minimum time frame between the

initiation and completion of our plan review. Early submittal facilitates a smoother plan review process as potential issues can be addressed before production. On average, each plan received is reviewed in 30 to 60 days. Any comments associated with that plan review will follow shortly thereafter.

As plan review is being completed, the Coast Guard will respond to requests for initial CVE, often times at an overseas location. Frequently, timing of these overseas examinations is contingent upon the availability of Coast Guard resources (usually Activities Europe, MSC, and the U.S. operating port field personnel). The complete initial CVE is normally comprised of four different visits. The initial visits are best performed in a shipyard while the vessel is under construction or being modified, or during a maintenance period when the vessel is out of service. This is preferred because any potential problems can be identified and resolved before the vessel arrives in the U.S. to embark passengers.

- The first Coast Guard visit, identified as the SFP exam, normally takes place when a majority of the structural fire protection work on the vessel is completed and the bulkheads and overheads remain open. The 2-3 member Coast Guard exam team will inspect a representative sample of the ship's structural fire protection insulation and the ventilation system interface with fire barriers.
- Next is an assessment visit by a single inspector to determine if the ship is complete enough to inspect the fire detection and extinguishing systems, machinery, means of escape arrangements, exit signage, and lifesaving equipment.
- The major portion of the initial CVE is carried out next, shortly before delivery. At this time, a 3-5 person Coast Guard team examines a representative sample of the fire detection and extinguishing systems, machinery, means of escape arrangements, exit signage, and

lifesaving equipment, and verifies that the final arrangements match our reviewed plans.

- The last part of an initial CVE usually takes place in the first port in the U.S. where passengers are embarked. During this time, the exam team will verify that any deficient items noted at earlier exams have been corrected. Before any passengers are boarded, the Coast Guard exam team will also conduct a fire and abandon ship drill to test the crew's competency in an emergency. Lifeboats not previously lowered and released during the preceding inspection in the shipyard will be tested as part of the abandon ship drill.

MSC SOLAS PLAN REVIEW GUIDANCE

The MSC has compiled lessons learned and solutions to common plan review issues into a comprehensive set of plan review guidance for vessels governed by SOLAS. The purpose is two-fold. First, it identifies the Coast Guard's expectations on various design aspects that had historically been identified late in construction (i.e. during the inspection). In this sense, it is our specific intention to eliminate "surprises" to builders and owners late in the control verification process. Second, the simple practice of documenting this guidance ensures consistency by MSC staff. It is not intended to substitute or replace laws, regulations, or other official Coast Guard policy but is specifically directed at promoting early and effective communication by all involved parties. Up to date plan review guidance is available online at <http://www.uscg.mil/hq/msc/PRGuidance.SOLAS.htm>.

Escape from External Areas

A challenge for certain external/open passenger decks, in particular those that are raised or isolated from a continuous open deck, is keeping access stairs reasonably spaced. In certain cases if the stairs are too close together, a single incident in

the area could render ineffective all escape away from the hazard, potentially restricting passengers to that deck. While escape from external decks does not normally become an issue, such an arrangement is not acceptable. In accordance with SOLAS, all external passenger areas should have acceptable escape arrangements with no possibility that a single incident can block all escape paths.

Fire Testing vs. Installation

We have noted the installation of ducting, fire doors, and structural fire insulation that, at times, is not consistent with the arrangements described in their material fire tests. In order for equipment to perform as fire tested, installations must be in accordance with manufacturer specifications and within parameters prescribed in the fire test report. Installation changes; such as reconfigured door latches or the creative use of shipyard materials to obtain proper fitting may require additional fire testing to ensure the installed material still complies with FTP Code requirements.

IMO HIGH SPEED CRAFT (HSC) CODE

The HSC Code is increasingly being utilized as a construction standard for both domestic and foreign flagged vessels operating out of US ports. For those high-speed vessels assessed under the CVE program, the timeline described earlier is condensed due to the relatively rapid construction schedule. For this reason it is important to schedule an SFP exam early and ensure the earliest possible submittal of flag-approved plans to the MSC. As with SOLAS, all materials used on a HSC Code vessel must have current approval certificates documenting the type of FTP Code test conducted and the MSC will review these during the SFP exam. For U.S. flagged HSC vessels, the recent Mutual Recognition Agreement with the European Commission (EC) provides for the use of, currently, 43 lifesaving, fire protection, and navigation products/materials previously not

available under USCG Type approval. Details of this agreement can be found at:

<http://www.uscg.mil/hq/g-m/mse4/mra.htm>

SOLAS REGULATION 17

SOLAS Chapter II-2/Regulation 17, *Alternative Design and Arrangements* affords greater opportunity to pursue novel, innovative designs traditionally prohibited by prescriptive regulations. Regulation 17 and IMO MSC/Circ. 1002 establish a formal process of performance-engineering analysis for the evaluation and approval of designs that deviate from the prescriptive fire safety standards. Such performance-based design is very time-consuming, requires an iterative engineering approach involving the approval bodies, and demands effective communication, particularly between the vessel designer, flag administration, and Coast Guard. It is imperative that the MSC be engaged early in the concept phase, well in advance of construction or final approval of the alternative design.

Marine Safety Center Online

The MSC website, www.uscg.mil/hq/msc, contains a wealth of information pertaining to commercial vessel safety. Numerous links provide key information, such as Navigation and Vessel Inspection Circulars (NVICs 1-93 and 4-95 being well known to the cruise industry). Also, previous MSC Newsletters and MSC plan review guidelines for CVE plan review are available on the website. Plan review guide H2-21 provides assistance in the preparation of drawings and information that MSC reviews to verify compliance with the applicable standards under the CVE program. This work instruction was developed as an aid in the preparation and review of vessel plans and submissions. Please note our plan review guidance is not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. If you need information that is not currently posted, please do not hesitate to contact the MSC.

Contact Information

The Marine Safety Center is available to answer questions at any time during the design and construction process. Concept review of novel arrangements and designs is encouraged. Please contact the Chief of the Major Vessel Branch (LCDR Scott Kelly) at (202) 366-6481 or fax your inquiry to (202) 366-3877. You may also email the MSC at ec@msc.uscg.mil. We look forward to working with you.

A world community can exist only with world communication, which means something more than extensive shortwave facilities scattered about the globe. It means common understanding, a common tradition, common ideas, and common ideals.

— Robert M. Hutchins